



**portal milling
machines**



RAFAMET

>>> RAFAMET S.A.

Comprehensive solutions, advanced technologies and cost efficient productivity now much more than ever before are obvious requirements that the right equipment supplier is expected to meet in order to help various industries to be successful, to stay competitive in this global manufacturing market.

For more than a century, RAFAMET has served to meet the diverse needs of the metalworking industry. Today RAFAMET SA is one of the world's leading builders of innovative and productive machine tools.

At the beginning of the twentieth century the foundry shops then existing began producing wheel lathes for machining railway wheel sets. This type of production continues up to the present day.

Since then RAFAMET has developed its products to include special purpose wheel lathes for railways and multi-purpose heavy duty single and double column vertical turning and boring mills.

Over the years the Company has become one of the largest suppliers of special purpose machine tools. It has manufactured more than 6000 heavy duty machines to date. These machine tools have been installed in more than 50 countries in the world.

Whilst maintaining its traditional production, RAFAMET continues to develop new product lines, using the Company's own, engineering task force. Such a development,

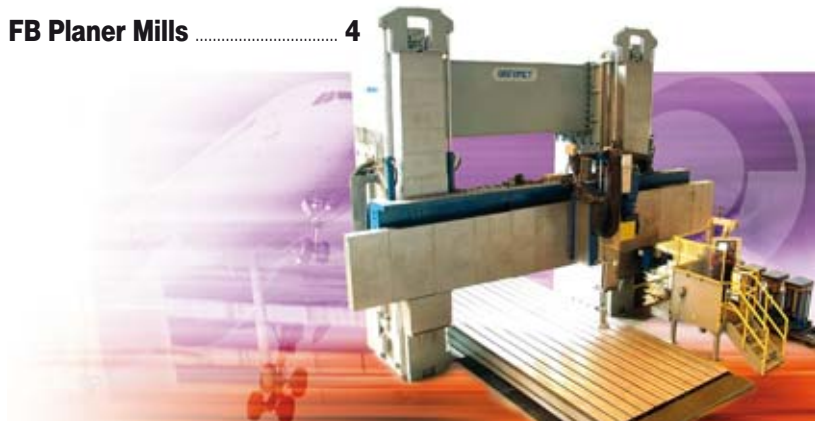
in recent years, has helped RAFAMET to be able to enter new manufacturing fields, i.e. bridge type milling machines, horizontal lathes, special machines, modular machining centres etc.

Simultaneously RAFAMET has developed the customer service and support program. It's total commitment to customer satisfaction has become a daily routine for the entire RAFAMET's staff. Moreover RAFAMET has been working in the ISO 9001 Quality Assurance/Management Standard environment since 1996.



>>> Table of contents

FB Planer Mills 4



GMC Gantry Milling Machines 5



HSM High Speed Vertical Milling Machines 7



ISO 9001

**BUREAU VERITAS
Certification**

N° 199857



Our work is based on the ISO 9001 quality system, which is continuously being improved and our principal goal is the complete satisfaction of our Customers.

>>> FB Planer Mills

CNC Planer Mills with fixed or movable cross-rail are designed to perform the following machining operations:

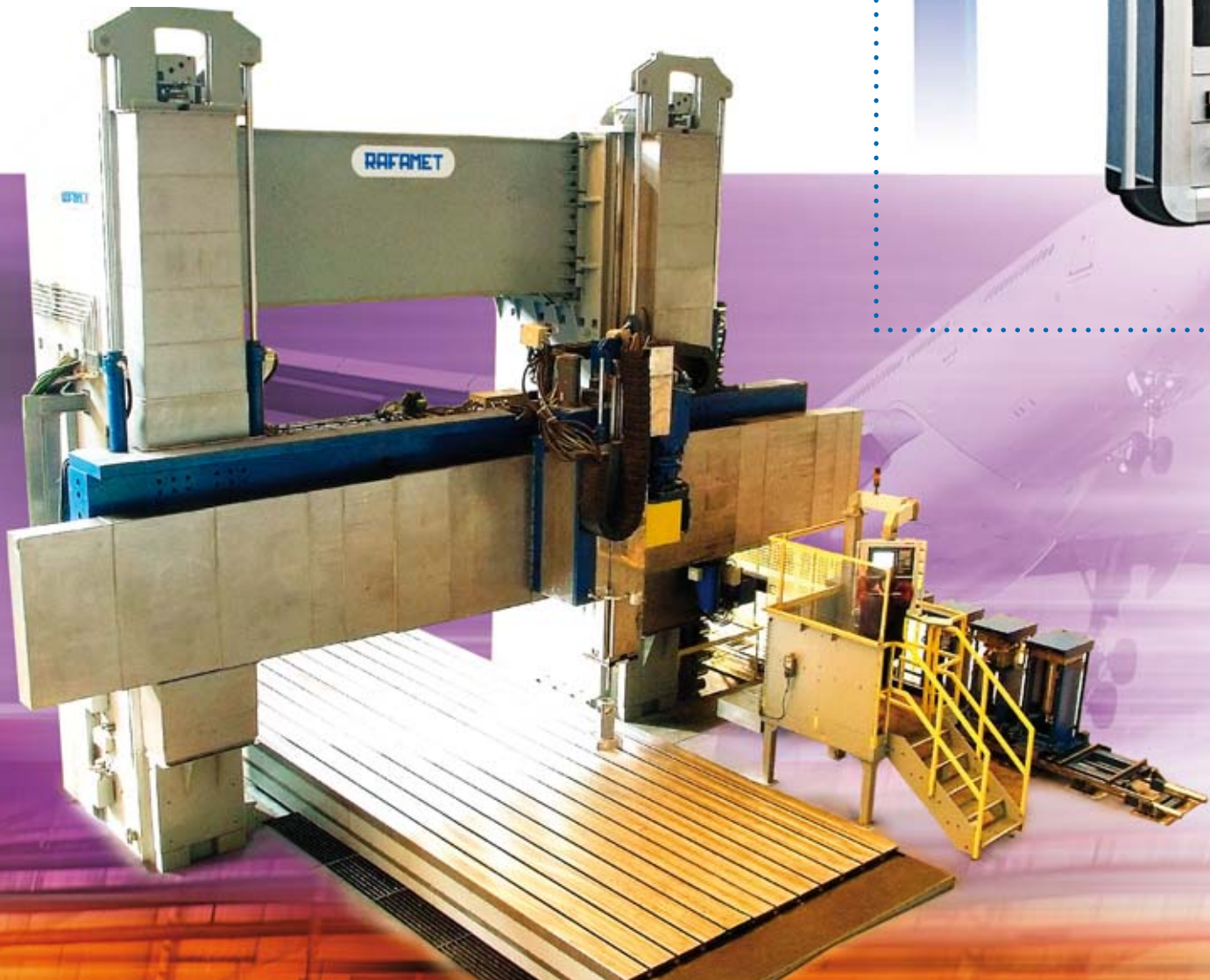
- milling
- reaming
- drilling with full drills
- drilling with trepan drills
- boring
- threading

Machine tool major members are:

- bed with movable table
- portal (with fixed or movable cross-rail)
- milling rail head

Application of CNC system enables automatic and efficient machining according to a technological program.

Planer Mills, FB series are modern CNC machine tools. Together with special equipment, the machine can be supplied as a milling center with automatic tool and tool head exchange and automatic workpiece measurement.



>>> GMC

GMC 320 CNC Gantry Milling Machine is designed to machine the complex workpieces within a working envelope of 20.000 x 3.200 x 2.100 mm.

Machining capabilities:

- 3D milling
- drilling
- reaming
- boring
- threading, envelope threading (helical motion) in all machining planes, i.e. XY, YZ, and XZ.

Machine tool major members are:

- Two parallel bed ways with a table plate equipped with the table geometry adjustment systems
- Moving portal (Gantry) housing a cast iron cross rail
- Milling rail head with a forged steel ram

Application of CNC system enables automatic and efficient machining according to a technological program. Both ram spindle and powered attachment tool spindle are provided with ISO 50 taper enabling automatic tool clamping/unclamping and cooperating with a tool magazine (option).



Technical Specifications

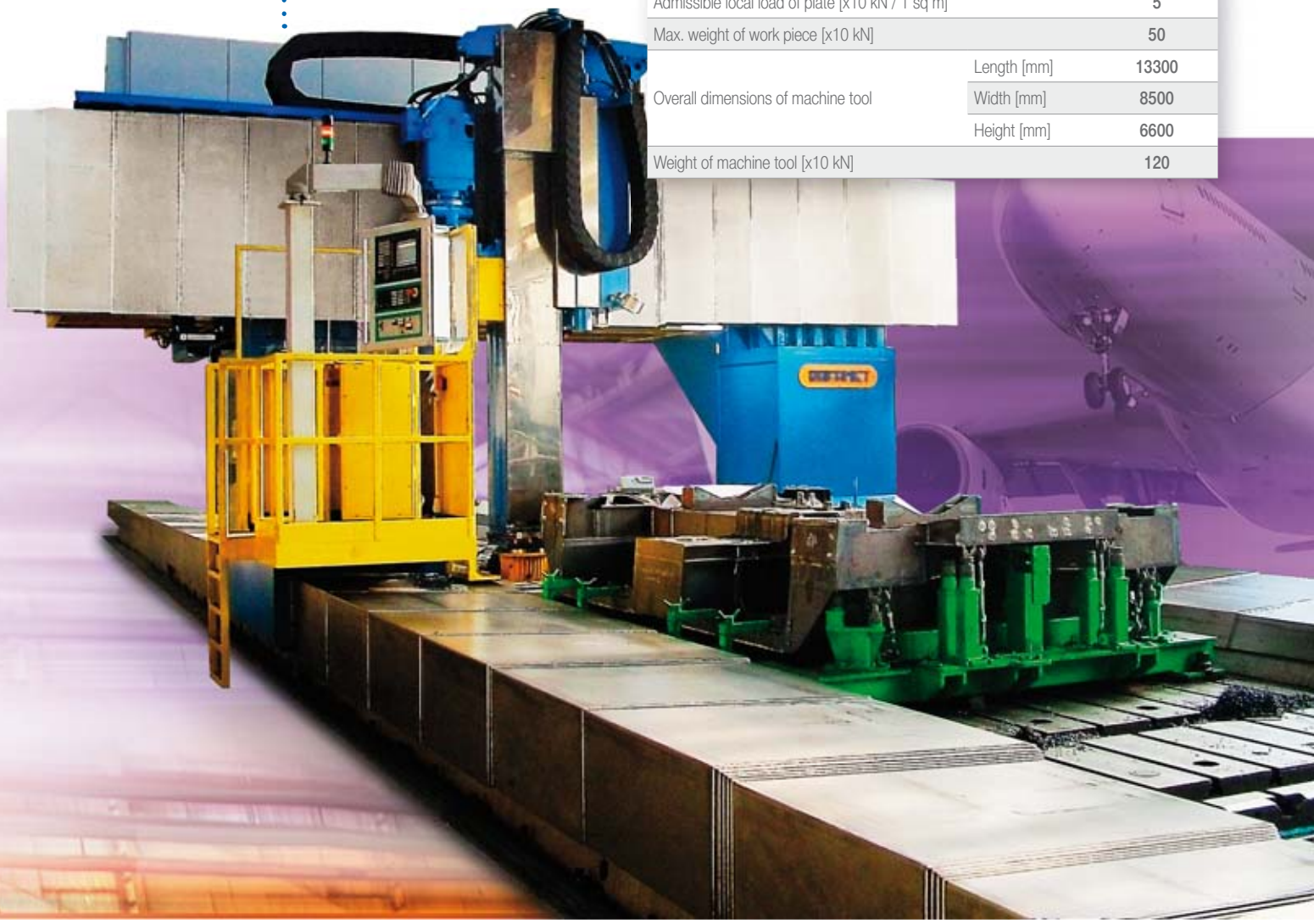
		FB 100 CNC	FB 200 CNC	FB 350 CNC
Table travel (X axis) [mm]		3000	4000	8500
Rail head travel along cross rail (Y axis) [mm]		1930	3000	5500
Ram travel (Z axis)		1500	1500	1500
Clearance between columns [mm]		1840	2500	4500
Clearance between table and cross rail [mm]		1600	1600	1600 to 3500
Cross rail travel [mm]		-	-	1900
Table surface [mm]		1000x3000	2000x4000	3500x8000
Ram cross-section [mm]		450x450	450x450	450x450
Max. power of main drive motor at ration i = 1 for	S1 [kW]	64	64	64
	S6 [kW]	70	70	70
Max. power of main drive motor at ration i = 5 for	S1 [kW]	55	55	55
	S6 [kW]	66	66	66
Max. rotation rates of main drive	At ratio i = 1 [rpm]	3000	3000	3000
	At ratio i = 5 [rpm]	750	750	750
Max. torque of main drive spindle	At ratio i = 1 [rpm]	820	820	820
	At ratio i = 5 [rpm]	3500/4200	3500/4200	3500/4200
Rapid travel in X, Y, and Z axes [mm/min]		7500	7500	8000
Positioning accuracy in X, Y, and Z axes [mm/1000 mm]		0.010	0.010	0.010
Positioning repeatability in X, Y, and Z axes [mm/1000 mm]		0.010	0.010	0.010
Overall dimensions of machine tool	Length [mm]	8900	10150	18150
	Width [mm]	5150	6120	9120
	Height [mm]	6000	6270	8770
Weight of machine tool [x10 kN]		40	60	170



Technical Specifications

GMC 320 CNC

Plate surface [mm]	2500 x 8000	
Bed ways length [mm]	11000	
Travel of Gantry along bed ways (X axis) [mm]	8000	
Travel of rail head along cross rail (Y axis) [mm]	4300	
Ram travel [mm]	1500	
Clearance between columns [mm]	4000	
Max. distance between spindle face and plate surface [mm]	2500	
Ram cross-section [mm]	450x450	
Max. power of main drive motor at ration i = 1 for	S1 [kW]	64
	S6 [kW]	70
Max. power of main drive motor at ration i = 5 for	S1 [kW]	55
	S6 [kW]	66
Max. rotation rates of main drive	At ratio i = 1 [rpm]	3000
	At ratio i = 5 [rpm]	750
Max. torque of main drive spindle	At ratio i = 1 [rpm]	820
	At ratio i = 5 [rpm]	3500/4200
Admissible local load of plate [x10 kN / 1 sq m]	5	
Max. weight of work piece [x10 kN]	50	
Overall dimensions of machine tool	Length [mm]	13300
	Width [mm]	8500
	Height [mm]	6600
Weight of machine tool [x10 kN]	120	



>>> HSM

HSM 180 CNC Milling Machine is designed to perform all types of milling, drilling and reaming operations. The machine tool is provided with a 2-axis head and a tool magazine what ensures complex work piece machining.

The table is guided along the base on the roller ways. It is provided with the T-slots enabling easy clamping of work piece or fixtures. The columns at their bottom part, are connected to the base while their top parts are connected by a fixed cross rail. Such a construction forms a rigid portal system of the machine tool.

Technical Specifications

		HSM 180 CNC
Table surface [mm]		1800 x 4500
Max. travel of table (X axis) [mm]		4000
Range of table load [x10 kN]	1st range	up to 3
	2nd range	above 3
Max. weight of work piece [x10 kN]		12
Rapid travel of table [m/min]	1st range	40
	2nd range	25
Max. travel of ram [mm]		1200
Max. travel of rail head [mm]		3000
Rapid travel of rail head and ram [m/min] [m/min]	1st range	40
	2nd range	25
Range of infinitely variable feed rates of rail head and ram		up to 5000
Max. distance between spindle face and table surface [mm]		1200*
Octagonal ram cross-section [mm]		650
Max. power of main drive motor at ration i = 1 for	S1 [kW]	64
	S6 [kW]	70
Max. power of main drive motor at ration i = 5 for	S1 [kW]	55
	S6 [kW]	66
Max. rotation rates of main drive	At ratio i = 1 [rpm]	3000
	At ratio i = 5 [rpm]	750
Max. torque of main drive spindle	At ratio i = 1 [rpm]	820
	At ratio i = 5 [rpm]	3500/4200
Overall dimensions of machine tool	Length [mm]	14000
	Width [mm]	7700
	Height [mm]	6750
Weight of machine tool [x10 kN]		60
* It concerns machine tool without additional tool attachments. When 2-axis head applied, the specifications are as follows:		
Distance between ram spindle face and table surface	Min. [mm]	960
	Max. [mm]	2260
Distance between head spindle face and table surface	Min. [mm]	200
	Max. [mm]	1000

Machine tool major members are:

- bed with movable table
- portal (with fixed or movable cross-rail)
- milling rail head with ram

Standard HSM 180 CNC is equipped with a 2-axis high speed milling head which may be replaced with a ram built-in live tool spindle. The machine tool along with a wide variety of special equipment can be suited to our Customers' specific needs.





RAFAMET product lines

Besides the Portal Milling Machines, RAFAMET develops the following product lines:

Vertical Turning & Boring Mills



Horizontal Lathes



Machine Tools for Shipbuilding Industry



Machine Tools for Railway Applications



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RAFAMET is one of the worldwide leading companies designing and manufacturing medium- and large-size heavy-duty machine tools.

Engineering & programming

From concept through design & analysis to final implementation, RAFAMET strong engineering & programming task force equipped with 33 Workstations with Solid Edge, AutoCAD, and Prelude CAD Software has the expertise in developing engineering solutions and software programs tailored to meet specific needs of wide variety of metal-working industries.

Own foundry

To ensure required productivity rate and top quality of machined surfaces in the same time, major members of our machine tools are made as heavily-ribbed box-type iron castings providing excellent rigidity and vibration damping of main structures even when machining at high cutting parameters.

- Grey iron: 0.1-40 ton piece
- Ductile iron: 0.1-15 ton piece
- Overall dimensions: 10000×4000×3000 mm

- Pattern making, moulding, heat treatment, laboratory

Contract machining

- As a machine tool builder having great metalworking experience, RAFAMET offers customers a contract machining capability.
- Our stock of machine tools can handle cast iron, forged and fabricated workpieces weighting up to 60 tons within working envelope of 14000×3600×3600 mm.

Service & technical support

- At RAFAMET, we not only build quality machines, we also provide training, service, and support to keep them in peak operating condition.



During installation, operators and maintenance staff receive a specific training on how to use and maintain the machine in order to ensure its best performance and a fault-free operation.

The English / German / Russian speaking servicemen having great skills in CNC machine tools are ready to assist our customers in case of any need.

RAFAMET machine tools users have at their disposal dedicated ISDN-based remote diagnostics facility able to communicate with the machines' control systems for immediate fault recognition and reporting.



- **RAFAMET Machine Tools**
- ul. Staszica 1, 47-420 Kuźnia Raciborska, Poland
- tel. +48 32 419 11 11,
- fax +48 32 419 13 66
- www.rafamet.com
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